it of the above-named journal as a medium for publication, taken in conjunction with the fact that the same has entered on its twenty-second year, affords a fitting opportunity for briefly reviewing its progress and prospects.

Of the work of the Society to which we have alluded it would be premature to judge. It has been founded in the cause of "those interested in the science of anatomy," and on glancing through its roll of members we see that the comparative and human anatomist are, at last, at work in a common cause. All modern experience shows it to be a truism that the study of human anatomy, if it is to bear good fruit, must be based upon the comparative method. It is well known that essays have long since been made, by certain leaders at home, and by Coues more especially in America, towards the realization of this dream: we will not pause to comment upon the somewhat tardy manner in which these have been received by human anatomists at large. The new Anatomical Society, as its constitution shows, is alive to the truth we have asserted, and, this being so, we shall follow with extreme interest the progress of the new brotherhood, which, if properly ordered, cannot fail to exercise a most beneficial influence upon the healing art.

The journal which the founders of the new Society have selected as their mouth-piece has had, thus far, a successful run. To its pages most of our leading anatomists and physiologists have contributed, and within its covers lie papers which have revolutionized the particular departments of knowledge with which they deal. Fifteen months ago it entered, under a change of publishers, upon a "new series"; and more recently it has, under its extended auspices, as might be expected, shown signs of increase in bulk. Its editors have been ever indefatigable, and most willing to oblige all who have applied to them; but the limit of their generosity has most certainly been reached, and, unless we are sadly mistaken, they will before long find it necessary to reconsider their scheme. In anticipation of this, and in the interests of workers in general, we would advise a more judicious selection and revision of matter tendered for publication than is at present adopted. In the current number we find thirteen papers presented in all—some of great merit, others of a more questionable character. In one of them we read at the outset the remarkable statement that "the minute anatomy of the skin of the horse has never before been described," and at the conclusion the erroneous assertion that "having got perfectly free from the old hair the (hair-) papilla now commences secreting again." On reading this and certain other papers which have been published of late, we cannot close the volumes without being struck with the general looseness and absence of all regard for authority which pervade them. This should not be. To papers such as these the worker turns for originality, or, failing that, for at least a *résumé* of work done up to the time of writing: their multiplication, in the unsatisfactory form to which we now reluctantly call attention, is regrettable, and, in the interests of a literature already overburdened, greatly to be deplored.

By way of further insuring the restriction of the publication within reasonable limits, we would urge the exclusion from the body of each issue of pure compilations and papers wholly controversial—such, for example, as one a short time ago devoted to a consideration of the relations of the Mammalia to the lower Vertebrata, and others which could be named. Productions such as these, containing nothing original, and occasionally but a portion of that which is known on the subjects under review, should be dealt with as supplementary matter. We hear a great deal nowadays, on all hands, about the scant recognition of work done by our countrymen. The retention of papers such as those to which we have alluded, in an authoritative journal like the one before us, cannot fail to call forth the unwelcome "*enthält nichts neues*"; and if it be persisted in, is it not likely that we may yet have to thank ourselves, in a measure, for the supposed want of respect?

Far be it from us to discourage the efforts of individual workers. In calling attention to these defects we merely desire to guard against reproach. If the journal whose interests we are seeking is to continue its useful work done in the past, and to do justice to the best interests of its new supporters in the future, some such deliberate modifications as those to which we have pointed are called for. Far-reaching interests will not excuse inauthoritativeness, and, if the new leaven is to work its best, the rising generation of anatomists will not tolerate inefficiency.

NOTES.

BARON VON SCHWERIN, the Swedish explorer, has presented his whole collection of ethnographical objects, gathered during the last two years' journeys in Africa, to the National Ethnographical Museum at Stockholm. The collection is the largest and most valuable ever presented to this institution by any private person.

ADMIRAL SIR ASTLEY COOPER KEY died suddenly last Saturday. He was in his sixty-seventh year. He had seen much active service, and had held some high appointments, including that of Principal Naval Lord of the Admiralty, and Director of the Royal Naval College, which owed much to his endeavours to apply science to the wants of the Navy.

THE Swedish Government has decided to expend £3000 on a new botanical museum at the Lund University.

THE eighth German Geographentag will be held at Berlin on April 4, 5, and 6.

FROM July 25 to 31 there will be held in Paris, in the rooms of the Medical School, a meeting of the Society for the study of Human and Animal Tuberculosis, under the presidency of Profs. Chauveau and Villemin. Interesting communications and papers are expected.

THE Chair of Psychology to which M. Ribot has been appointed has long existed in the Collège de France, and was not, as has been stated, established by the Paris Municipal Council. This Chair must not be confounded with that of *Philosophie Biologique*, which the Council is creating for Prof. Giard.

A SHORT course of lectures on "The Protection of Buildings from Lightning," by Prof. Oliver J. Lodge, F.R.S., to be delivered under the title of the "Dr. Mann Lectures," as a memorial of the late Dr. Mann, will be begun on Saturday afternoon next, March 10, at the Society of Arts. The course will consist of two lectures, the first of which will take the form of a slight historical sketch, and will call attention to the outstanding questions, difficulties, and points of controversy in connection with lightning-conductors. At the second lecture experimental answers will be given to some of the questions raised, and an endeavour will be made to supply a more complete account of the liability of conductors to side-flash than has yet been attempted. The chair will be taken at 3 o'clock.

LAST Saturday, Sir James Paget delivered an interesting address to the students attending University Extension Lectures in London. His subject was "Scientific Study," and he showed in a remarkably clear and striking way how the study of science develops the power of observation, fosters accuracy of thought, gives men a vivid conception of the difficulty of attaining to a real knowledge of the truth, and makes them familiar with the methods by which they may pass from that which is proved to the thinking of what is probable. He also offered illustrations of the power of science to minister to the needs of ordinary life, and to satisfy man's "insatiable appetite for the knowledge of wonders." Such addresses as this, delivered by acknowledged masters in their own departments of study, do excellent service to science by bringing prominently before the public the solid advantages which are to be gained by scientific training. They are also made the occasion of some good writing in the daily newspapers. The *Daily News*, for example, had an excellent article on Sir James Paget's address, enforcing the principle that "the study of science goes further than other studies to teach us the simple love of truth for truth's sake."

THE *Japan Weekly Mail* states in connection with the recent publication of the "Life and Letters of Charles Darwin" that the *Beagle*, in which Darwin made his memorable voyage, is now used as a Japanese training-ship. It is stationed at Yokosuka, a naval station in the Bay of Yedo, not far from Yokohama.

THE Directors of the Crystal Palace have arranged that the Photographic Exhibition shall remain open until March 17, a fortnight later than was at first intended. The public interest in this Exhibition is said to have exceeded the most sanguine expectations.

THE Council has reported to the Senate of the University of Cambridge against the admission of women to degrees.

AT the University of Zürich there are at present forty-five female students, twenty-nine of whom study medicine, fourteen philosophy, and two political economy. In 1887 there were 108 female medical students in Paris.

A NEW and most valuable method of determining the molecular weights of non-volatile as well as volatile substances has just been brought into prominence by Prof. Victor Meyer (*Berichte*, 1888, No. 3). The method itself was discovered by M. Raoult, and finally perfected by him in 1886, but up to the present has been but little utilized by chemists. It will be remembered that Prof. Meyer has recently discovered two isomeric series of derivatives of benzil, differing only in the position of the various groups in space. If each couple of isomers possess the same molecular weight, a certain modification of the new Van't Hoff-Wislicenus theory as to the position of atoms in space is rendered necessary; but if the two are polymers, one having a molecular weight *n* times that of the other, then the theory in its present form will still hold. Hence it was imperative to determine without doubt the molecular weight of some two typical isomers. But the compounds in question are not volatile, so that vapour density determinations were out of the question. In this difficulty Prof. Meyer has tested the discovery of M. Raoult upon a number of compounds of known molecular weights, and found it perfectly reliable and easy of application. The method depends upon the lowering of the solidifying point of a solvent, such as water, benzene, or glacial acetic acid, by the introduction of a given weight of the substance whose molecular weight is to be determined. The amount by which the solidifying point is lowered is connected with the molecular weight M by the following extremely simple formula: $M = T \times \frac{P}{C}$; where C represents the amount by which the point of congelation is lowered, P the weight of anhydrous substance dissolved in 100 grammes of the solvent, and T a constant for the same solvent readily determined from volatile substances whose molecular weights are well known. On applying this law to the case of two isomeric benzil derivatives the molecular weights were found, as expected, to be identical, and not multiples; hence Prof. Meyer is perfectly justified in introducing the necessary modification in the "position in space" theory. Now that this generalization of Raoult is placed upon a secure basis, it takes its well-merited rank along with that of Dulong and Petit as a most valuable means of checking molecular weights, especially in determining which of two or more possible values expresses the truth.

A REPORT on Indian fibres and fibrous substances exhibited at the Colonial Exhibition, 1886, has been published by authority of the Secretary of State for India. It contains the results of a laboratory investigation conducted by C. F. Cross, E. J. Bevan, and C. M. King, in association with E. Joynson; and Dr. George Watt contributes notes of methods of treatment and uses prevalent in India. In issuing the volume, the authors say that perhaps the utmost they can hope to do is to indicate the scope of a more adequate treatment of the subject. They are convinced that when the vegetable fibres come to be recognized as constituting a special field for research, and worthy the attention of those who have command of the necessary resources, there will be a considerable gain to science in the results of the systematic and sustained investigations which will follow.

MESSRS. LONGMANS AND CO. are preparing for publication "The Testing of Materials of Construction," embracing the description of testing machinery and apparatus auxiliary to mechanical testing, and an account of the most important researches on the strength of materials, by William Cawthorne Unwin, F.R.S.; "A Text-book of Elementary Biology," by R. J. Harvey Gibson, Lecturer on Botany in University College, Liverpool; "Dissolution and Evolution and the Science of Medicine," by C. Pitfield Mitchell; and "The Fundamental Principles of Chemistry practically taught, by a New Method," by Robert Galloway, Honorary Member of the Chemical Society of the Lehigh University, U.S.

MESSRS. SWAN SONNENSCHEIN, LOWREY, AND CO. are issuing, in parts, what promises to be a most useful publication—"The Cyclopædia of Education."

A FIFTH edition of Munro and Jamieson's "Pocket-book of Electrical Rules and Tables" has been issued. The first part of this excellent little volume deals with the fundamental principles and measurements of the science; the second part with their applications, including telegraphy, telephony, electric lighting, and the transmission of power by means of electricity. In the new edition many important additions have been made.

WE have received Part I. of "The Characeæ of America," by Dr. T. F. Allen. The author has postponed the publication of the work from time to time in order to accumulate material for a more complete account of the species growing in America. The demand in America for information concerning these plants is, however, so pressing that Dr. Allen has thought it best to issue the first part, which contains introduction, morphology, and classification. The second part will appear in a year or two, and will give descriptions of the species now known to inhabit American waters. The work is illustrated.

THE new number of the Proceedings of the American Philosophical Society (July to December, 1887), contains, among other important papers, a valuable "Contribution to the History of the Vertebrata of the Trias of North America," by E. D. Cope. There are also interesting papers on the question, "Were the Toltecs an Historic Nationality?", and on the ethnology of British Columbia, the former by D. G. Brinton, the latter by F. Boas.

MM. BEAUREGARD AND GALIPPE, of Paris, have issued a second edition of their practical guide to micrographical work. It has been much enlarged.

M. REINWALD, of Paris, has just brought out the first volume of MM. C. Vogt and Yung's "Anatomie comparé pratique."

The Report on the Administration of the Meteorological Department of the Government of India for the financial year 1886–87 gives interesting details of the work carried on in the various provinces, and of the inspection of the stations. The observatories now number 135; three have been established in the new territory of Upper Burmah, where scarcely anything is yet known about the meteorology. Rainfall is registered at 486 stations, and bright sunshine at six observatories. Ground temperature is recorded at five selected stations, and some of the results are of great interest, showing that the average temperature of the ground in India is about 5° above that of the air; and also that there is a small oscillation of many years' duration, amounting to about 4°, affecting the air temperature and the intensity of solar radiation. Considerable attention is paid to the laws of drought, and the hope is expressed that by degrees they may be established on a sound physical basis. The influence of forests on rainfall has been fully discussed, and the evidence afforded is favourable to the assumption that forests increase the rainfall. The work of marine meteorology also is actively prosecuted; the weather charts of the Bay of Bengal have been lately mentioned (Nature, December 8, 1887, p. 137). A work on the storms of that district is in course of preparation, and it is proposed to draw up a hand-book on the subject, for the use of seamen.

Under the title of "Deutsche ueberseeische meteorologische Beobachtungen," the Hamburg Meteorological Office has commenced a new publication containing observations made under its auspices abroad. The first part contains observations made at six stations in Labrador from September 1883 to December 1884. These stations were equipped in August 1882 as supplementary to the International Polar Expeditions, and, as the missionary observers were willing to continue the observations, and the stations are important owing to the passage of many barometric depressions over Labrador, it has been decided to retain them. The other stations for which observations are published are Hatzfeldhafen (New Guinea) and Walfish Bay (West Coast of Africa). Future parts are to be published as soon as another year's observations are received from Labrador, and will include observations received from other stations in the meantime.

The Pilot Chart for the North Atlantic Ocean for the month of February draws attention to the great danger to Transatlantic navigation from icebergs and field ice, from the present time and until the end of August. The ice is liable to be encountered off the Grand Banks as far south as 42° N., and between the 42nd and 52nd meridians. It is pointed out that too much reliance should not be placed on the use of the thermometer, and that warning may often be obtained by means of the echo thrown back from the surface of an iceberg when a whistle is sounded, or any sharp noise is made.

The Chief Signal Officer of the United States has issued a new edition of "Instructions to Observers of the Signal Service" (Washington, 1887, 142 pp. large 8vo). The "Instructions" are most complete, and contain information which will be very useful to observers in all countries, and many points that will be novel to English readers. On the establishment of a station, a local committee of management is formed, the chairman of which corresponds directly with the Signal Office, and a detailed report on the working of the station is furnished each year. All barometrical observations are to be reduced for gravity at lat. 45°, and complete directions are given for removing air from both barometers and thermometers. Instead of the usual drawings of the instruments, detailed plans of all their separate parts are given; by this means observers obtain an accurate knowledge of their construction. The observation of clouds is referred to seven types only. Full directions are given for drawing weather maps from telegraphic reports, and, finally, a good list of works recommended for study, and the necessary tables for reduction, complete the volume.

A remarkable achievement in transportation of live fish a great distance is described by M. Jousset de Bellesme in a recent number of the *Revue Scientifique*. The aquatic fauna of Chili being very poor, a selection of fish, comprising 100 Californian salmon, 40 carp, 20 tench, 20 gudgeon, with a number of eels, barbs, minnows, lotes, &c., were despatched from Paris in September last to stock the waters. The voyage, of about a month, was, of course, a very trying one in this relation, especially as regards variation of temperature. In treatment of the fish care was taken to lessen the activity of their functions by refrigeration and starvation (a carp will live fifty days without food), and a continuous air circulation was kept up in the water (which was not renewed). There was some loss among the salmon, but thirty-nine were successfully installed at Santiago; and the other groups were mostly intact. Only the gudgeons, lotes, and barbs, suffered serious loss. The experiment seems to prove the possibility of carrying alive the most delicate fish from any point of the globe to any other point. It was also ascertained that a temperature of 23° C. is not hurtful to the health of alevins of *Salmo quinat*, as might have been feared. The expense of the transport was considerable, but was willingly borne by the Chilian Government, in view of future advantage to the country.

The *Zoologist* for March reprints an extraordinary pamphlet, entitled, "An Account of Wolves nurturing Children in their Dens." This pamphlet was printed at Plymouth in 1852, and has long been out of print. On the wrapper of a copy in the Zoological Library of the Natural History Museum at South Kensington there is the following memorandum in the handwriting of the late Colonel Hamilton Smith:—"This account, I am informed by friends, is written by Colonel Sleeman, of the Indian army, the well-known officer who had charge of the Thugg inquiries, and who resided long in the forests of India." The writer records a number of cases of children who are said to have been nurtured by wolves in India. In one instance a large female wolf was seen to leave her den followed by three whelps and a little boy. This happened near Chandour, ten miles from Sultanpoor, in the year 1847. The boy went on all fours, and ran as fast as the whelps could. He was caught with difficulty, and had to be tied, as he was very restive, and struggled hard to rush into holes and dens. When a grown-up person came near him he became alarmed, and tried to steal away. But when a child came near him he rushed at it with a fierce snarl, like that of a dog, and tried to bite it. When cooked meat was put near him he rejected it with disgust; but when raw meat was offered he seized it with avidity, put it on the ground under his hands, like a dog, and ate it with evident pleasure. He would not let anyone come near him while he was eating, but he made no objection to a dog coming and sharing his food with him. The trooper who captured the boy left him in charge of the Rajah of Hasunpoor, who sent him to Captain Nichollets, commanding the first regiment of the Oude Local Infantry at Sultanpoor; and some interesting notes as to the boy's habits are given on this officer's authority. He died in August 1850; and after his death it was remembered that he had never been known to laugh or smile. He used signs when he wanted anything, and very few of them except when hungry, and he then pointed to his mouth. When his food was placed at some distance from him, he would run to it on all fours, like any four-footed animal, but at other times he would walk uprightly occasionally. He shunned human beings, and seemed to care for nothing but eating. If the pamphlet can be proved to be perfectly trustworthy, it certainly deserves to be carefully studied by anthropologists.

THE last issue (Heft 37) of the German Asiatic Society of Japan contains a lengthy paper, with numerous tables of analyses, on the food of the Japanese, the authors being Dr. Kellner and M. Mori. They refer at the outset to the extraordinary differences of opinion amongst various writers as to the exact nature of the staple diet of the Japanese people. One writer says it is almost wholly boiled rice flavoured with small quantities of fish or pickled vegetables; another says that, as far as means allow, it is a mixed, and not a purely vegetable diet, and therefore physiologically ample; a third that it is almost wholly vegetarian; a fourth, that as much animal food is consumed in Japan as in Germany, Austria, France, and the Danubian Principalities; and so on. All the writers here quoted are modern men of science who have resided in Japan, and have therefore had ample opportunities for forming an accurate opinion. As to beef, however (there is no mutton in Japan), there can be no question that its consumption is very small. In 1882 only 36,288 beasts were slaughtered, or about 1 kilogramme of meat per head of the population, and it must be borne in mind that a large consumption takes place at the open ports amongst Europeans, and in the proximity of vessels. The conclusions to which the present writers—one of them, it will be noticed, being a native investigator—come is that the food of the Japanese people varies so considerably that, from a physiological point of view, no single proposition can be laid down respecting it. There are two main groups to be distinguished: in one, the people from poverty are compelled to be vegetarians, and use a diet which leaves much to be desired in its effect in strengthening the body; those in the second group are able to obtain animal food from the sea with some ease, and therefore use a mixed diet, which in kind and quantity appears ample. Between these two extremes we find all kinds of diet. The authors have not only made analyses of the various food-stuffs of Japan, but have investigated in various public institutions, from prisons to schools for army officers, the effect of various classes of food on the labour and weight of different persons.

ON February 10, at 12.40 a.m., a brilliant meteor was seen at Venersborg, in Sweden. It went in a direction from south to north, and was surrounded by an intense blue light. It was seen to fall to the earth some considerable distance off, but no sound could be heard.

DR. ROBERT FRIES, a Swedish botanist, has completed a memoir on the fungus-flora of the south-west coast of Sweden on which he has been engaged for a number of years. It embraces 865 varieties.

PROF. SVEN LOVÉN, the "Nestor of Swedish science," recently completed his seventy-ninth year, when he received numerous congratulations from friends at home and abroad. He is at present engaged in publishing a catalogue by Linnæus of the Lovisa Ulrika Museum in Sweden, which will be accompanied by numerous illustrations and explanatory notes from a modern scientific point of view by Prof. Lovén.

THE report of the Norwegian Association for the Preservation of Archæological Remains for last year shows that thirty-one barrows were opened in 1887 by the Association at Tvetene, in the parish of Brunlanæs, all of which were found to date from the early Iron Age. Some 146 objects of various kinds were found. These objects were added to the Museum of the Christiania University.

THE well-known Norwegian naturalists, M. Michelet and Dr. Bahrt, have introduced a Bill into the Storthing, prohibiting the killing of any birds (except birds of prey, ravens, rooks, and magpies) in the whole of Norway during the period April 1 to August 15, also the taking of eggs or young birds. The chief object of this Bill is to put a stop to the present wanton destruction of birds by foreign "sportsmen."

MR. F. S. WELLS, of Southgate, has sent us four photographs of the lunar eclipse of January 21 last. Considering the small size of the photographs, they are very interesting, and Mr. Wells tells us that they were taken without costly apparatus. In the original negatives the images were merely seven-sixteenths of an inch. Mr. Wells enlarged them five diameters.

MR. R. COPELAND writes to us:—"I have just learnt from Leipzig that Prof. Krehl is the University Librarian at that place, and not Virchl as printed in Dr. Muir's letter on p. 246, and repeated by me on p. 344 of NATURE." Mr. Copeland also mentions that the "Demonstratio eliminationis Cramerianæ" was duly entered under De Prasse by Mr. R. Tucker, Hon. Sec. Mathematical Society, when drawing up the catalogue of the "Mathematical and Scientific Library of the late Charles Babbage" in 1872. This library forms the nucleus of Lord Crawford's collection of scientific books.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus* ♀) from India, presented by Captain R. F. Hibbert; a Common Raccoon (*Procyon lotor*) from North America, presented by Mr. C. J. Urquhart; a —— Civet (*Viverricula* ——) from China, presented by Mr. Percy Montgomery; two Laughing Kingfishers (*Dacelo gigantea*) from Australia, presented by Mrs. Mars Buckley; twelve Black-headed Gulls (*Larus ridibundus*), a Common Gull (*Larus canus*), British, presented by Mr. J. G. Barker; five Prince of Wales's Pheasants (*Phasianus principalis* ♂ ♂ ♀ ♀ ♀) from Afghan Turkistan, presented by Major Peacock, R.E.; a Cape Eagle-Owl (*Bubo capensis*), five Angulated Tortoises (*Chersina angulata*), three Areolated Tortoises (*Homopus areolatus*), a Natal Sternothere (*Sternothærus castaneus*), a Smooth Snake (*Homolosoma lutrix*), an Infernal Snake (*Boodon infernalis*), a Rufescent Snake (*Leptodira rufescens*), a Spotted Slowworm (*Acontias meleagris*), five Round-throated Frogs (*Rana fuscigula*), a Narrow-headed Toad (*Bufo angusticeps*) from South Africa, presented by the Rev. G. H. R. Fisk, C.M.Z.S.; a Natal Sternothere (*Sternothærus castaneus*) from South Africa, presented by Colonel J. H. Bowker, F.Z.S.; two Cirl Buntings (*Emberiza cirlus*), British, purchased; a Hog Deer (*Cervus porcinus*), an Eland (*Oreas canna*), a Yellow-footed Rock Kangaroo (*Petrogale xanthopus*) born in the Gardens.

OUR ASTRONOMICAL COLUMN.

TEMPEL'S COMET, 1867 II.—M. Raoul Gautier has published in the Memoirs of the Société de Physique et d'Histoire Naturelle de Genève, vol. xxix. No. 12, a discussion of the orbit of the comet discovered by Herr W. Tempel, at Marseilles, on April 3, 1867, with especial reference to its appearances in 1873 and 1879. There are several points of especial interest about this comet: not only was it an addition to the number of known comets of short period, but it possesses the peculiarity of an elliptic orbit of but slight inclination, and of less eccentricity than that of any other member of the same class. Its spectrum, too, would seem to be unusual, for the imperfect view of it obtained by Dr. Huggins, May 4 and 8, 1867, led him to conclude that the bright bands, which it gave together with a continuous spectrum, were not those of carbon. Its orbit, and especially its period, is also subject to great perturbations from the action of Jupiter, and its perihelion distance was considerably increased between 1873 and 1867 without its aphelion distance being much altered. It had also been identified by M. Winnecke with the comet observed by Goldschmidt at Paris, May 16, 1855, in a search for De Vico's comet, but von Asten's inquiries have shown that the identification was an erroneous one.

M. Gautier—though the perturbations due to Jupiter during the period 1873–79, with which he was principally engaged, have been but small, the two bodies being always distant from each other—has calculated the perturbations after the method of variation of the elements, since this method was most suitable